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Testing MODIS products against eddy fluxes and biometric features in a vineyard in North-Eastern Italy

A. Pitacco (1), F. Meggio (1), G. Fila (1,2)

1. University of Padova, Dept. Environmental Agronomy and Crop Science, Legnaro, Italy, (2) CRA-CIN Agricultural Research Council – Research Center for Industrial Crops, Bologna, Italy (andrea.pitacco@unipd.it / Fax +39 049 827 2850)

In a typical wine growing area of the Veneto Region (North Eastern Italy, 45.74 N, 12.44 E), a monitoring station has been set up on a vineyard and operated since summer 2005. Being flat, homogeneous and extensive (25 hectares), the plot is very well suited both for direct micrometeorological measurements and remote sensing observations. The site was intended to be an anchor station to study grapevine energy, water and carbon budgets in quasi-ideal conditions. The vineyard is also characterized by a very uniform management (cultivar, pruning, plant height) and soil profile.

Belonging to the CarboItaly/FLUXNET network, an eddy covariance tower provides continuous measurements of sensible heat, water vapour and carbon dioxide fluxes since date of deploying, and benefits of specially-processed products by the Moderate Resolution Imaging Spectroradiometer (MODIS) initiative. At the coarsest resolution (1 km), more than 80% of the pixel centred on the tower contains the vineyard canopy, while for the middle and highest resolutions (500 and 250 m) 100% vineyard pixels are available. Vegetative growth (leaf area, above-ground biomass), canopy parameters (leaf gas exchange, plant water status, radiation interception), phenological development, fruit growth and final yield are also monitored.

MODIS products related to vegetation properties (e.g. LAI, FPAR, NDVI) were tested against ground-based biometric measurements as predictors for grapevine canopy features. While the validation activity is still under completion due to temporary unavailability of part of MODIS data, still undergoing a reprocessing, results obtained so far

were generally in a good agreement with the *in situ* observations.